## Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claims 1-54 (Cancelled).

Claim 55 (Currently Amended): A composition for use in synthesizing a nucleic acid molecule, comprising one or more enzymes having nucleic acid polymerase activity and one or more compounds having a chemical formula selected from the group consisting of formula I or formula II, or a salt thereof, wherein said compound is not betaine, an amino acid, or a saccharide:

## Formula I:

$$\begin{array}{c|c}
\hline
(R_1)_a \\
\hline
(R_3)_c & N \\
\hline
A & q
\end{array}$$

where N is positively charged;

wherein q = 1 to 100,000, wherein when q = 2 to 100,000 each monomer of formula I may be the same as or different from the other monomers of formula I;

wherein Z may be the same as or different from Y;

wherein each Y and Z are independently selected from the group consisting of -OH, -NH<sub>2</sub>, -SH, -PO<sub>3</sub>H, -CO<sub>2</sub>H, -SO<sub>3</sub>H and hydrogen;

wherein f is an integer from 0 to 2, m is an integer from 0 to 20 and e is an integer from 0 to 2;

wherein R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> may be the same or different and are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, amino, mercaptan, thiol, halo, nitro, nitrilo, hydroxy, hydroxyalkyl, hydroxyaryl, phosphato, alkoxy, oxide, ether, ester (alkanoyloxy), carboxy, carbonyl, sulfonyl, sulfonic and amido groups, and d is an integer from 0 to 2;

wherein a, b, and c are independently an integer from 0 to 1, with the proviso that no more than two of a, b, and c are zero;

wherein R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> may be the same or different and are independently selected from the group consisting of:

- a) =O and;
- b) (W)<sub>g</sub> | -(CR<sub>7</sub>)<sub>n</sub>;

with the proviso that no more than two of A, R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are selected from the group consisting of hydrogen, methyl, ethyl and propyl; and

with the proviso that if one, and only one, of  $R_1$ ,  $R_2$  and  $R_3$  is =0, then A is none of hydrogen, methyl, ethyl and propyl;

wherein each  $R_7$  and W may be the same or different and are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, amino, thiol, mercaptan, halo, nitro, nitrilo, hydroxy, hydroxyalkyl, hydroxyaryl, phosphato, alkoxy, oxide, ether, ester (alkanoyloxy), carboxy, carbonyl, sulfonyl, sulfonic and amido groups; g is an integer from 0 to 2 and n is an integer from 0 to 20, with the proviso that if two of  $R_1$ ,  $R_2$ , and  $R_3$  are =0, then the other is not =0;

### Formula II:

wherein Formula II is saturated or unsaturated;

wherein q = 1 to 100,000, wherein when q = 2 to 100,000, each monomer of formula II may be the same as or different from each other monomer of formula II;

wherein X is selected from the group consisting of N, C, O, P and S;

wherein Y is selected from the group consisting of O, N, S, P, C, -O-NH-, -O-CH<sub>2</sub>-NH-, -O-CH<sub>2</sub>-O-, -NH-CH<sub>2</sub>-NH-, -O-CH(CH<sub>3</sub>)-NH-, -NH-C H(CH<sub>3</sub>)-NH-, -O-CH(CH<sub>3</sub>)-O-, -NH-C(CH<sub>3</sub>)<sub>2</sub>-NH-, -O-S-, -O-CH<sub>2</sub>-S-, -NH-S-, -N H-CH<sub>2</sub>-S-, and other mercaptan, phosphato, alkoxy, oxide, ether, esters (alkanoyloxy), carboxy, sulfonyl, sulfonic and amido groups;

with the proviso that if either X or Y is N, then the other is not C;

wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub> and R<sub>8</sub> may be the same or different and are independently selected from the group consisting of hydrogen, alkyl, alkenyl,

alkynyl, aryl, amino, thiol, mercaptan, halo, nitro, nitrilo, hydroxy, hydroxyalkyl, hydroxyaryl, phosphato, alkoxy, oxide, ether, ester (alkanoyloxy), carboxy, sulfonyl, sulfonic and amido groups; and

wherein a, b, c, d, e, m, n and o are integers which may be the same or different and are independently selected from 0 to 2 for a, b, c, d, and e, and 0 to 5 for m, n and o.

Claim 56 (Previously presented): The composition of claim 55, with the proviso that when q=1 and one of  $(R_1)_a$ ,  $(R_2)_b$ , and  $(R_3)_c$  is oxygen and the other two are the same or different and are independently selected from the group consisting of hydrogen, methyl, ethyl and propyl, then A is not methyl, ethyl or propyl.

Claim 57 (Currently amended): The compositing composition of claim 55, wherein when a, b, or c is zero, the corresponding R group is a pair of electrons.

Claim 58 (Previously presented): The composition of claim 55, wherein Y and/or X are N and m, n and o are 1.

Claim 59 (Previously presented): The composition of claim 55, wherein Y and/or X are N and/or O, and m and n are 1, and o is 2.

Claim 60 (Previously presented): The composition of claim 55, wherein said composition comprises at least two compounds having the formula I or II, or salts or esters thereof.

Claim 61 (Previously presented): The composition of claim 60, wherein said composition comprises 2 to 5 compounds having the formula I or II, or salts or esters thereof.

Claim 62 (Cancelled).

Claim 63 (Previously presented): The composition of claim 60, wherein said composition comprises an N-alkylimidazole compound.

Claim 64 (Previously presented): The composition of claim 63, wherein said N-alkylimidazole compound is 1-methylimidazole or 4-methylimidazole.

Claims 65-66 (Cancelled).

Claim 67 (Previously presented): The composition of claim 55, wherein said enzyme having nucleic acid polymerase activity is selected from the group consisting of a DNA polymerase, an RNA polymerase and a reverse transcriptase.

Claim 68 (Previously presented): The composition of claim 67, wherein said DNA polymerase is selected from the group consisting of *Taq*, *Tne*, *Tma*, *Pfu*, VENT<sup>TM</sup>, DEEPVENT<sup>TM</sup> and *Tth* DNA polymerases, and mutants and variants thereof.

Claim 69 (Previously presented): The composition of claim 67, wherein said reverse transcriptase is selected from the group consisting of M-MLV reverse transcriptase,

RSV reverse transcriptase, AMV reverse transcriptase, RAV reverse transcriptase, MAV reverse transcriptase and HIV reverse transcriptase, and mutants and variants thereof.

Claim 70 (Previously presented): The composition of claim 67, wherein said reverse transcriptase is substantially reduced in RNase H activity.

Claim 71 (Cancelled).

Claim 72 (Currently amended): A method for synthesizing a nucleic acid molecule, comprising:

- (a) mixing a nucleic acid template with one or more of the compositions of claim 55 or claim 71 to form a mixture; and
- (b) incubating said mixture under conditions whereby a first nucleic acid molecule complementary to all or a portion of said template is made.

Claim 73 (Previously presented): The method of claim 72, further comprising incubating said first nucleic acid molecule under conditions whereby a second nucleic acid molecule complementary to all or a portion of said first nucleic acid molecule is made.

Claim 74 (Previously presented): A nucleic acid molecule made according to the method of claim 72.

Claim 75 (Currently amended): A method for amplifying a nucleic acid molecule comprising:

- (a) mixing nucleic acid template with one or more of the compositions of claim

  55 or claim 71 to form a mixture; and
- (b) incubating said mixture under conditions whereby a nucleic acid molecule complementary to all or a portion of said template is amplified.

Claim 76 (Currently amended): A method for sequencing a nucleic acid molecule comprising:

- (a) mixing a nucleic acid molecule to be sequenced with one or more primers, one or more of the compositions of claim 55 or claim 71, one or more nucleotide nucleotides and one or more terminating agents to form a mixture;
- (b) incubating said mixture under conditions whereby a population of molecules complementary to all or a portion of said molecule to be sequenced is synthesized; and
- (c) separating said population to determine the nucleotide sequence of all or a portion of said molecule to be sequenced.

Claim 77 (Currently amended): A kit for use in synthesis of a nucleic acid molecule, said kit comprising one or more of the compositions of claim 55 or claim 71.

Claim 78 (Previously presented): The kit of claim 77, wherein said kit comprises at least two of said compositions.

Claim 79 (Currently amended): The kit of claim 77, further comprising one or more components selected from the group consisting of one or more nucleotide nucleotides, one or more DNA polymerase polymerases, one or more reverse transcriptase transcriptases, one or more suitable buffers, one or more primers and one or more terminating agents.

Claim 80 (New): A composition for use in synthesizing a nucleic acid molecule, comprising one or more enzymes having polymerase activity and one or more compounds selected from the group consisting of 1-methylimidazole, 4-methylimidazole, 4-methylmorpholine N-oxide, poly(2-ethyl-2-oxazoline) of average molecular weight about 50,000 to about 500,000 daltons and poly(diallyldimethylammonium chloride) of average molecular weight about 100,000 to about 200,000 daltons.

Claim 81 (New): The composition of claim 80, wherein said composition comprises at least two compounds selected from the group consisting of 1-methylimidazole, 4-methylimidazole, 4-methylimidazole, N-oxide, poly(2-ethyl-2-oxazoline) of average molecular weight about 50,000 to about 500,000 daltons and poly(diallyldimethylammonium chloride) of average molecular weight about 100,000 to about 200,000 daltons.

Claim 82 (New): The composition of claim 80, wherein said enzyme having nucleic acid polymerase activity is selected from the group consisting of a DNA polymerase, an RNA polymerase and a reverse transcriptase.

Claim 83 (New): The composition of claim 82, wherein said DNA polymerase is selected from the group consisting of *Taq*, *Tne*, *Tma*, *Pfu*, VENT<sup>TM</sup>, DEEPVENT<sup>TM</sup> and *Tth* DNA polymerases, and mutants and variants thereof.

Claim 84 (New): The composition of claim 82, wherein said reverse transcriptase is selected from the group consisting of M-MLV reverse transcriptase, RSV reverse transcriptase, AMV reverse transcriptase, RAV reverse transcriptase, MAV reverse transcriptase, and mutants and variants thereof.

Claim 85 (New): The composition of claim 82, wherein said reverse transcriptase is substantially reduced in RNase H activity.

Claim 86 (New): A method for synthesizing a nucleic acid molecule, comprising:

(a) mixing a nucleic acid template with one or more compounds having a chemical formula selected from the group consisting of formula I or formula II, or a salt thereof, wherein said compound is not betaine:

### Formula I:

$$\begin{array}{c|c}
 & (R_1)_a \\
 & (R_3)_c & N - (R_2)_b \\
 & A & q
\end{array}$$

where X is

where N is positively charged;

wherein q = 1 to 100,000, wherein when q = 2 to 100,000 each monomer of formula I may be the same as or different from the other monomers of formula I;

wherein Z may be the same as or different from Y;

wherein each Y and Z are independently selected from the group consisting of -OH, -NH<sub>2</sub>, -SH, -PO<sub>3</sub>H, -CO<sub>2</sub>H, -SO<sub>3</sub>H and hydrogen;

wherein f is an integer from 0 to 2, m is an integer from 0 to 20 and e is an integer from 0 to 2;

wherein R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> may be the same or different and are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, amino, mercaptan, thiol, halo, nitro, nitrilo, hydroxy, hydroxyalkyl, hydroxyaryl, phosphato, alkoxy, oxide, ether, ester (alkanoyloxy), carboxy, carbonyl, sulfonyl, sulfonic and amido groups, and d is an integer from 0 to 2;

wherein a, b, and c are independently an integer from 0 to 1, with the proviso that no more than two of a, b, and c are zero;

wherein R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> may be the same or different and are independently selected from the group consisting of:

- a) =O and;
- b) (W)<sub>g</sub>
  |
  -(CR<sub>7</sub>)<sub>n</sub>;

with the proviso that no more than two of A, R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are selected from the group consisting of hydrogen, methyl, ethyl and propyl; and

with the proviso that if one, and only one, of  $R_1$ ,  $R_2$  and  $R_3$  is =0, then A is none of hydrogen, methyl, ethyl and propyl;

wherein each R<sub>7</sub> and W may be the same or different and are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, amino, thiol, mercaptan, halo, nitro, nitrilo, hydroxy, hydroxyalkyl, hydroxyaryl, phosphato, alkoxy, oxide, ether, ester (alkanoyloxy), carboxy, carbonyl, sulfonyl, sulfonic and amido groups; g is an integer from 0 to 2 and n is an integer from 0 to 20, with the proviso that if two of  $R_1$ ,  $R_2$ , and  $R_3$  are =0, then the other is not =0;

### Formula II:

wherein Formula II is saturated or unsaturated;

wherein q = 1 to 100,000, wherein when q = 2 to 100,000, each monomer of formula II may be the same as or different from each other monomer of formula II;

wherein X is selected from the group consisting of N, C, O, P and S;

wherein Y is selected from the group consisting of O, N, S, P, C, -O-NH-, -O-CH<sub>2</sub>-NH-, -O-CH<sub>2</sub>-O-, -NH-CH<sub>2</sub>-NH-, -O-CH(CH<sub>3</sub>)-NH-, -NH-C H(CH<sub>3</sub>)-NH-, -O-CH(CH<sub>3</sub>)-O-, -NH-C(CH<sub>3</sub>)<sub>2</sub>-NH-, -O-S-, -O-CH<sub>2</sub>-S-, -NH-S-, -N H-CH<sub>2</sub>-S-, and other mercaptan, phosphato, alkoxy, oxide, ether, esters (alkanoyloxy), carboxy, sulfonyl, sulfonic and amido groups;

with the proviso that if either X or Y is N, then the other is not C;

wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub> and R<sub>8</sub> may be the same or different and are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, amino, thiol, mercaptan, halo, nitro, nitrilo, hydroxy, hydroxyalkyl, hydroxyaryl, phosphato, alkoxy, oxide, ether, ester (alkanoyloxy), carboxy, sulfonyl, sulfonic and amido groups; and

wherein a, b, c, d, e, m, n and o are integers which may be the same or different and are independently selected from 0 to 2 for a, b, c, d, and e, and 0 to 5 for m, n and o, to form a mixture; and

(b) incubating said mixture under conditions whereby a first nucleic acid molecule complementary to all or a portion of said template is made, wherein the bases of said nucleic acid template comprise greater than about 60% guanine and cytosine.

Claim 87 (New): The method of claim 86, further comprising incubating said first nucleic acid molecule under conditions whereby a second nucleic acid molecule complementary to all or a portion of said first nucleic acid molecule is made.

Claim 88 (New): A nucleic acid molecule made according to the method of claim 86.

Claim 89 (New): A method for amplifying a nucleic acid molecule, comprising:

(a) mixing a nucleic acid template with one or more compounds having a chemical formula selected from the group consisting of formula I or formula II, or a salt thereof, wherein said compound is not betaine:

## Formula I:

$$\begin{array}{c|c}
 & (R_1)_a \\
 & (R_3)_c & (R_2)_b \\
 & A & q
\end{array}$$

where A is

where X is

where N is positively charged;

wherein q = 1 to 100,000, wherein when q = 2 to 100,000 each monomer of formula I may be the same as or different from the other monomers of formula I;

wherein Z may be the same as or different from Y;

wherein each Y and Z are independently selected from the group consisting of -OH, -NH<sub>2</sub>, -SH, -PO<sub>3</sub>H, -CO<sub>2</sub>H, -SO<sub>3</sub>H and hydrogen;

wherein f is an integer from 0 to 2, m is an integer from 0 to 20 and e is an integer from 0 to 2;

wherein R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> may be the same or different and are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, amino, mercaptan, thiol, halo, nitro, nitrilo, hydroxy, hydroxyalkyl, hydroxyaryl, phosphato, alkoxy, oxide, ether, ester (alkanoyloxy), carboxy, carbonyl, sulfonyl, sulfonic and amido groups, and d is an integer from 0 to 2;

wherein a, b, and c are independently an integer from 0 to 1, with the proviso that no more than two of a, b, and c are zero;

wherein R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> may be the same or different and are independently selected from the group consisting of:

- a) =O and;
- b)  $(W)_g$

 $-(CR_7)_n;$ 

with the proviso that no more than two of A, R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are selected from the group consisting of hydrogen, methyl, ethyl and propyl; and

with the proviso that if one, and only one, of  $R_1$ ,  $R_2$  and  $R_3$  is =0, then A is none of hydrogen, methyl, ethyl and propyl;

wherein each  $R_7$  and W may be the same or different and are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, amino, thiol, mercaptan, halo, nitro, nitrilo, hydroxy, hydroxyalkyl, hydroxyaryl, phosphato, alkoxy, oxide, ether, ester (alkanoyloxy), carboxy, carbonyl, sulfonyl, sulfonic and amido groups; g is an integer from 0 to 2 and n is an integer from 0 to 20, with the proviso that if two of  $R_1$ ,  $R_2$ , and  $R_3$  are =0, then the other is not =0;

#### Formula II:

wherein Formula II is saturated or unsaturated;

wherein q = 1 to 100,000, wherein when q = 2 to 100,000, each monomer of formula II may be the same as or different from each other monomer of formula II;

wherein X is selected from the group consisting of N, C, O, P and S;

wherein Y is selected from the group consisting of O, N, S, P, C, -O-NH-, -O-CH<sub>2</sub>-NH-, -O-CH<sub>2</sub>-O-, -NH-CH<sub>2</sub>-NH-, -O-CH(CH<sub>3</sub>)-NH-, -NH-C H(CH<sub>3</sub>)-NH-, -O-CH(CH<sub>3</sub>)-O-, -NH-C(CH<sub>3</sub>)<sub>2</sub>-NH-, -O-S-, -O-CH<sub>2</sub>-S-, -NH-S-, -N H-CH<sub>2</sub>-S-, and other mercaptan, phosphato, alkoxy, oxide, ether, esters (alkanoyloxy), carboxy, sulfonyl, sulfonic and amido groups;

with the proviso that if either X or Y is N, then the other is not C;

wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub> and R<sub>8</sub> may be the same or different and are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, amino, thiol, mercaptan, halo, nitro, nitrilo, hydroxy, hydroxyalkyl, hydroxyaryl, phosphato, alkoxy, oxide, ether, ester (alkanoyloxy), carboxy, sulfonyl, sulfonic and amido groups; and

wherein a, b, c, d, e, m, n and o are integers which may be the same or different and are independently selected from 0 to 2 for a, b, c, d, and e, and 0 to 5 for m, n and o, to form a mixture; and

(b) incubating said mixture under conditions whereby a nucleic acid molecule complementary to all or a portion of said template is amplified, wherein the bases of said nucleic acid template comprise greater than about 60% guanine and cytosine.

Claim 90 (New): A method for sequencing a nucleic acid molecule, comprising:

(a) mixing a nucleic acid molecule to be sequenced with one or more primers, one or more compounds having a chemical formula selected from the group consisting of formula I or formula II, or a salt thereof, wherein said compound is not betaine:

## Formula I:

$$\begin{bmatrix}
(R_1)_a \\
(R_3)_c & N & (R_2)_b
\end{bmatrix}_{q}$$

where N is positively charged;

wherein q = 1 to 100,000, wherein when q = 2 to 100,000 each monomer of formula I may be the same as or different from the other monomers of formula I;

wherein Z may be the same as or different from Y;

wherein each Y and Z are independently selected from the group consisting of -OH, -NH<sub>2</sub>, -SH, -PO<sub>3</sub>H, -CO<sub>2</sub>H, -SO<sub>3</sub>H and hydrogen;

wherein f is an integer from 0 to 2, m is an integer from 0 to 20 and e is an integer from 0 to 2;

wherein R<sub>4</sub>, R<sub>5</sub>, and R<sub>6</sub> may be the same or different and are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, amino, mercaptan, thiol, halo, nitro, nitrilo, hydroxy, hydroxyalkyl, hydroxyaryl, phosphato, alkoxy, oxide, ether, ester (alkanoyloxy), carboxy, carbonyl, sulfonyl, sulfonic and amido groups, and d is an integer from 0 to 2;

wherein a, b, and c are independently an integer from 0 to 1, with the proviso that no more than two of a, b, and c are zero;

wherein R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> may be the same or different and are independently selected from the group consisting of:

a) =O and;

b) (W)<sub>g</sub> | -(CR<sub>7</sub>)<sub>n</sub>;

with the proviso that no more than two of A, R<sub>1</sub>, R<sub>2</sub> and R<sub>3</sub> are selected from the group consisting of hydrogen, methyl, ethyl and propyl; and

with the proviso that if one, and only one, of  $R_1$ ,  $R_2$  and  $R_3$  is =0, then A is none of hydrogen, methyl, ethyl and propyl;

wherein each  $R_7$  and W may be the same or different and are independently selected from the group consisting of hydrogen, alkyl, alkenyl, alkynyl, aryl, amino, thiol, mercaptan, halo, nitro, nitrilo, hydroxy, hydroxyalkyl, hydroxyaryl, phosphato, alkoxy, oxide, ether, ester (alkanoyloxy), carboxy, carbonyl, sulfonyl, sulfonic and amido groups; g is an integer from 0 to 2 and n is an integer from 0 to 20, with the proviso that if two of  $R_1$ ,  $R_2$ , and  $R_3$  are =0, then the other is not =0;

# Formula II:

wherein Formula II is saturated or unsaturated;

wherein q = 1 to 100,000, wherein when q = 2 to 100,000, each monomer of formula II may be the same as or different from each other monomer of formula II;

wherein X is selected from the group consisting of N, C, O, P and S;

wherein Y is selected from the group consisting of O, N, S, P, C, -O-NH-, -O-CH<sub>2</sub>-NH-, -O-CH<sub>2</sub>-O-, -NH-CH<sub>2</sub>-NH-, -O-CH(CH<sub>3</sub>)-NH-, -NH-C H(CH<sub>3</sub>)-NH-, -O-CH(CH<sub>3</sub>)-O-, -NH-C(CH<sub>3</sub>)<sub>2</sub>-NH-, -O-S-, -O-CH<sub>2</sub>-S-, -NH-S-, -N H-CH<sub>2</sub>-S-, and other mercaptan, phosphato, alkoxy, oxide, ether, esters (alkanoyloxy), carboxy, sulfonyl, sulfonic and amido groups;

with the proviso that if either X or Y is N, then the other is not C;

wherein R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub> and R<sub>8</sub> may be the same or different and are independently selected from the group consisting of hydrogen, alkyl, alkenyl,

alkynyl, aryl, amino, thiol, mercaptan, halo, nitro, nitrilo, hydroxy, hydroxyalkyl, hydroxyaryl, phosphato, alkoxy, oxide, ether, ester (alkanoyloxy), carboxy, sulfonyl, sulfonic and amido groups; and

wherein a, b, c, d, e, m, n and o are integers which may be the same or different and are independently selected from 0 to 2 for a, b, c, d, and e, and 0 to 5 for m, n and o, one or more nucleotides and one or more terminating agents to form a mixture;

- (b) incubating said mixture under conditions whereby a population of molecules complementary to all or a portion of said molecule to be sequenced is synthesized; and
- (c) separating said population to determine the nucleotide sequence of all or a portion of said molecule to be sequenced, wherein the bases of said nucleic acid molecule to be sequenced comprise greater than about 60% guanine and cytosine.

Claim 91 (New): A method for synthesizing a nucleic acid molecule, comprising:

- (a) mixing a nucleic acid template with one or more of the compositions of claim 80 to form a mixture; and
- (b) incubating said mixture under conditions whereby a nucleic acid molecule complementary to all of a portion of said template is made.

Claim 92 (New): The method of claim 91, wherein the bases of said nucleic acid template comprise greater than about 60% guanine and cytosine.

Claim 93 (New): The method of claim 91, further comprising incubating said first nucleic acid molecule under conditions whereby a second nucleic acid molecule complementary to all or a portion of said first nucleic acid molecule is made.

Claim 94 (New): A method for amplifying a nucleic acid molecule, comprising:

- (a) mixing a nucleic template with one or more of the compositions of claim 80 to form a mixture; and
- (b) incubating said mixture under conditions whereby a nucleic acid molecule complementary to all or a portion of said template is amplified.

Claim 95 (New): The method of claim 94, wherein the bases of said nucleic acid template comprise greater than about 60% guanine and cytosine.

Claim 96 (New): A method for sequencing a nucleic acid molecule, comprising:

- (a) mixing a nucleic acid molecule to be sequenced with one or more primers, one or more of the compositions of claim 80, one or more nucleotides and one or more terminating agents to form a mixture;
- (b) incubating said mixture under conditions whereby a population of molecules complementary to all or a portion of said molecules to be synthesized, is synthesized; and

(c) separating said population to determine the nucleotide sequence of all or a portion of said molecule to be sequenced.

Claim 97 (New): The method of claim 96, wherein the bases of said nucleic acid template comprise greater than about 60% guanine and cytosine.

Claim 98 (New): A kit for use in synthesis of a nucleic acid molecule, said kit comprising one or more of the compositions of claim 80.

Claim 99 (New): The kit of claim 98, wherein said kit comprises at least two of said compositions.

Claim 100 (New): The kit of claim 98, further comprising one or more components selected from the group consisting of one or more nucleotides, one or more DNA polymerases, one or more reverse transcriptases, one or more suitable buffers, one or more primers and one or more terminating agents.